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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,987	12/08/2003	Akiharu Miyanaga	740756-2681	1100
22204	7590	01/09/2006	EXAMINER	
NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128			MARKHAM, WESLEY D	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/728,987	Applicant(s) MIYANAGA ET AL.	
	Examiner Wesley D. Markham	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-13, 15-18 and 20 is/are allowed.
- 6) ☒ Claim(s) 2, 4, 6-9, 14 and 19 is/are rejected.
- 7) ☒ Claim(s) 3, 5 and 21-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 and 30 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/426,483.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Acknowledgement is made of the amendment filed by the applicant on 11/7/2005, in which Claims 2, 4, 6, 8, 10, 13, 16, and 18 were amended. **Claims 2 – 24** remain pending in U.S. Application Serial No. 10/728,987, and an Office action on the merits follows.

Claim Objections

2. The objection to Claim 21, set forth in paragraph 6 of the previous Office action (i.e., the non-final Office action mailed on 7/5/2005), is withdrawn in light of the applicant's amendment to Claim 2 to broaden the claim to be inclusive of the film materials recited in dependent Claim 21.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The rejections of Claims 2 – 24 under 35 U.S.C. 112, first paragraph, and 35 U.S.C. 112, second paragraph, set forth in paragraphs 9 – 12 of the previous Office action, are withdrawn in light of the applicant's amendment to delete the, "where said

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reactive gas is introduced into said reaction chamber in a direction toward the surface of the object" limitation from each of the pending independent claims (i.e., Claims 2, 4, 6, 8, 10, 13, 16, and 18).

Terminal Disclaimer

5. The terminal disclaimer filed on 11/7/2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of USPNs 5,626,922; 6,110,542; and 6,660,342 has been reviewed and is accepted. The terminal disclaimer has been recorded. As such, the obviousness-type double patenting rejections set forth in paragraphs 14 – 16 of the previous Office action are withdrawn.

Double Patenting

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970). A statutory type (35 U.S.C. 101) double patenting

rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

8. **Claims 2, 4, 6, 7, 8, 9, 14, and 19** are rejected under 35 U.S.C. 101 as claiming the same invention as that of Claims 1, 3, 6, 9, 11, 14, 5, and 13, respectively, of prior U.S. Patent No. 6,660,342 because the aforementioned claims are identical in scope. This is a double patenting rejection.

Allowable Subject Matter

9. Claims 3, 5, and 21 – 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 10 – 13, 15 – 18, and 20 are allowed. Claims 2, 4, 6 – 9, 14, and 19 have been rejected under 35 U.S.C. 101 (statutory double patenting) but no prior art has been applied against the claims.
10. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art of record is as follows. Ikegaya et al. (JP 61-253369 A) teaches a method of coating an article by plasma CVD in which a high-frequency power source such as a microwave power source is used in combination with a DC power source as a plasma excitation source. However, a DC power source (as taught by Ikegaya et al.) is not equivalent to an “electromagnetic wave”, and, in addition, the

DC power source of Ikegaya et al. is not pulsed, and Ikegaya et al. does not teach the relative power values of the microwave power source and the DC power source. Corn et al. (USPN 4,585,516) teaches a process for operating a parallel-plate plasma reactor in which one plate is connected to a source of a high frequency signal, and the second plate is connected to a source of a low frequency signal. Either signal can be continuous or pulsed. However, the process of Corn et al. is an etching process, not a deposition process, and the power value of the pulsed electromagnetic wave is not higher than the power value of the continuous electromagnetic wave, as required by the applicant's claims. Further, since each electromagnetic wave of Corn et al. is supplied to a different "plate", the waves are not superposed on each other, as required by the applicant's claims. Doki et al. (USPN 5,231,057) teaches a plasma CVD process in which a continuous or pulsed RF wave is supplied to an electrostatic chuck in order to bias a substrate, and a continuous or pulsed microwave is applied to form a plasma from a reactive gas. However, since one wave is applied to the substrate and the other wave is applied to the reactive gas in the process of Doki et al., the waves are not "superposed on" each other, as required by the claims. Matsuo et al. (JP 63-80540 A) teaches a plasma apparatus and plasma CVD method in which the microwave power used to generate a stable plasma can be either intermittent (i.e., pulsed) or continuous. However, the aforementioned microwaves are not "superposed on" each other, and the relative power value of the pulsed and continuous microwaves is not taught by Matsuo et al. Yau et al. (USPN 4,837,185) teaches a plasma CVD process for

depositing a thin SiON film on a substrate in which a high frequency EM wave pulse and a low frequency EM wave pulse are superposed on each other (see Figure 3B). However, neither pulse is continuous, and Yau et al. does not teach the relative power value of the two pulses.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D. Markham whose telephone number is (571) 272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



WDM

Wesley D Markham
Examiner
Art Unit 1762



TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER